

IN THE CLAIMS:

Please cancel claims 3, 4, 9, 10, 13, 14 and 16, amend claims 1, 2, 5-8, 11 and 12, and add new claims 17-24, in accordance with the following listing showing the status of all claims in the application.

1. (Currently Amended) A computer system, comprising:  
a plurality of computer processor cores in which at least two differ in processing performance, and in which all execute the same instruction set; and  
~~a performance measurement and transfer mechanism for distributing that moves a plurality of executing computer processing jobs amongst the plurality of computer processor cores according to a best fit of processor hardware availability to processing software requirements to improve a throughput metric.~~
2. (Currently Amended) The computer system of claim 1, further comprising:  
~~at least one of an operating system, firmware, and special-purpose hardware hosted on the plurality of computer processor cores and including, firmware, and special-purpose hardware that includes the performance measurement and transfer mechanism, and providing that provides for a periodic test of whether a particular computer processing job would be a better fit of processor hardware availability to processing software requirements on a to determine relative performance of different jobs on different hosted one ones of the plurality of computer processor cores.~~
3. (Canceled)

4. (Canceled)

5. (Currently Amended) The computer system of claim 1, further comprising:  
at least one of an operating system hosted on the plurality of computer processor cores,  
firmware, and special-purpose hardware ~~hosted on the plurality of computer processor cores and~~  
~~including that includes~~ the performance measurement and transfer mechanism, and ~~providing~~  
~~that provides for a periodic test of operating states within each of the computer processor cores in~~  
~~making~~ a decision as to where to place a given processing software workload, wherein said  
operating states are dependent on at least one of the operating voltage and clock frequency of a  
corresponding one of the plurality of computer processor cores.

6. (Currently Amended) The computer system of claim 1, further comprising:  
at least one of an operating system hosted on the plurality of computer processor cores,  
firmware, and special-purpose hardware ~~hosted on the plurality of computer processor cores and~~  
~~including that includes~~ the performance measurement and transfer mechanism, and ~~providing~~  
~~that provides for a periodic test of operating states within each of the computer processor cores in~~  
~~making~~ a decision as to where to place a given processing software workload, wherein said  
operating states are dependent on run-time re-configuration of hardware structures of  
corresponding ones of the plurality of computer processor cores.

7. (Currently Amended) A method for operating multiple processor cores,  
comprising:

placing a plurality of computer processor cores on a single semiconductor die, in which at least two computer processor cores differ in processing performance, and in which all execute the same instruction set;

measuring the performance of each of a plurality of computer processing jobs hosted amongst the plurality of computer processor cores; and

transferring individual ones of said plurality of computer processing jobs amongst targeted ones of said plurality of computer processor cores ~~according to a best fit of processor hardware availability to processing software requirements to improve a throughput metric.~~

8. (Currently Amended) The method of claim 7, further comprising:

~~hosting at least one of an operating system, firmware, and special purpose hardware on the plurality of computer processor cores to include performance measurement and transfer mechanisms, and providing for a periodic test of whether a particular computer processing job would be a better fit of processor hardware availability to processing software requirements on a different hosted one of said plurality of to determine relative performance of different jobs on different ones of the computer processor cores.~~

9. (Canceled)

10. (Canceled)

11. (Currently Amended) The method of claim 7, further comprising:

~~hosting at least one of an operating system, firmware, and special purpose hardware on the plurality of computer processor cores to include a performance measurement and transfer mechanism, and providing for a periodic test of operating states within each of the computer processor cores in making a decision as to where to place a given processing software workload, wherein said operating states are dependent on at least one of the operating voltage and clock frequency of a corresponding one of the plurality of computer processor cores.~~

12. (Currently Amended) The method of claim 7, further comprising:

~~hosting at least one of an operating system, firmware, and special purpose hardware on the plurality of computer processor cores to include a performance measurement and transfer mechanism, and providing for a periodic test of operating states within each of the computer processor cores in making a decision as to where to place a given processing software workload, wherein said operating states are dependent on run-time re-configuration of hardware structures of corresponding ones of the plurality of computer processor cores.~~

13. (Canceled)

14. (Canceled)

15. (Original) The method of claim 7, further comprising:

associating workloads for execution on specific processor cores based on at least one of user and application hints.

16. (Canceled)

17. (New) The computer system of claim 1, further comprising at least one of an operating system hosted on the plurality of computer processor cores, firmware, and special-purpose hardware that includes the performance measurement and transfer mechanism.

18. (New) The computer system of claim 1, wherein the performance measurement and transfer mechanism maximizes total system throughput.

19. (New) The computer system of claim 1, wherein the performance measurement and transfer mechanism periodically transfers the executing computer processing jobs to a new assignment amongst the plurality of computer processor cores, collects performance statistics about execution at the new assignment, and then determines whether to reassign the executing computer processing jobs to different computer processor cores based on the performance statistics collected.

20. (New) The computer system of claim 19, wherein the performance measurement and transfer mechanism swaps execution of the executing computer processing jobs between the computer processor cores for a period of time, monitoring resulting performance, and then builds a table with relative performances of jobs on different types of cores.

21. (New) The computer system of claim 20, wherein the jobs are reassigned based on the relative performances, by assigning jobs that benefited most from large complex processor cores to said large complex processor cores.
22. (New) The computer system of claim 19, wherein the determination of whether to reassign the jobs to different computer processor cores also is based on at least one of user-defined or workload-defined metrics.
23. (New) The computer system of claim 1, wherein the throughput metric comprises a number of instructions per second.
24. (New) The computer system of claim 1, wherein movement of the executing computer processing jobs is constrained to occur only at operating system time slice intervals.